

August 6, 2007

VIA HAND DELIVERY

Mr. Julius Knapp, Chief
Office of Engineering & Technology
Federal Communications Commission
445 Twelfth Street, S.W.
Washington, DC 20554

Re: Ambient Corporation
Experimental License WD2XEQ
File No. 0132-EX-AR-2007
Opposition to ARRL Informal Objection

Dear Mr. Knapp:

On behalf of Ambient Corporation ("Ambient" or the "Company"), we hereby oppose the July 25, 2007 Informal Objection filed by ARRL relating to the application for renewal of Experimental License WD2XEQ filed on August 1, 2007. For the reasons set forth below, we request that the Informal Objection be dismissed or denied and Ambient's renewal application granted.

1. We strongly object to ARRL's attempts to undermine the rapid and widespread development of promising and innovative broadband technologies under the FCC's new Access BPL rules, as contrary to the FCC's statutory mandate in Section 706 of the Telecommunications Act of 1996 ("Act"), 47 U.S.C. § 157. The claims which ARRL is attempting to raise with respect to our experimental operations plainly involve its fundamental opposition to FCC rules and policy regarding interference mitigation and other technical requirements of general applicability to the Access BPL industry. Not surprisingly, many of these same matters are the subject of claims which ARRL has made in challenging the FCC's decisions in its Report and Order (FCC 04-245) in ET Docket No. 04-37/03-104 and in its *Memorandum Opinion and Order* (FCC 06-113) on reconsideration in ET Dkt No 04-37/03-104, now on appeal in the D.C. Circuit (Case No. 06-1343). Ambient has intervened in support of the FCC in that appeal because we believe that the FCC acted reasonably and within the scope of its statutory authority in adopting its new Access BPL rules, and because we believe Access BPL technologies have the potential to provide the numerous consumer benefits which the FCC foresaw in adopting these rules.

2. ARRL claims that renewal of Ambient's Experimental License to continue development of more advanced and improved Access BPL devices and systems is not justified.

These claims, however, ignore the FCC's statutory mandate under Section 706 of the Act, the findings which the FCC made in adopting its Access BPL rules, the justification which Ambient provided when its Experimental License was most recently updated, and the numerous Progress Report submissions which Ambient has made to keep the FCC apprised of its device and software development activities under its Experimental License.

Ambient's extensive experimental testing program has made possible rapid development of a new generation of the industry's first high-speed BPL access products and has demonstrated the Company's technical leadership in the industry. In September of 2006, Ambient was one of the first companies to receive a grant of BPL Equipment Authorization demonstrating compliance with the FCC's new Access BPL requirements, FCC IDENTIFIER: SPKBHPLCAA, Equipment Class: Access Broadband Over Powerline System, X2 PLC NODE. Development and testing of the overhead configurations of these advanced devices took place at the Company's Briarcliff Manor facilities.

As previously described in its Progress Report submitted August 1, 2007, Ambient has made additional advances in its software and hardware to develop new generations of products which fully address all applicable regulatory requirements. Under its experimental program, it has continued to implement several Class I permissible changes based on testing conducted at Briarcliff Manor. Additional testing has been completed at the Company's Briarcliff Manor facilities in preparation for the submission of a Class II permissible change expected in the near future. The Company's numerous software and hardware achievements are summarized in the attached Exhibit A.

In addition, Ambient recently completed a one-year test program under contract for New York State Energy Research and Development Authority (NYSERDA) which is being operated over the Company's legacy BPL system. Specifically, Ambient and Consolidated Edison were awarded a research and development grant by NYSERDA in March of 2006. The scope of the project was to determine if the BPL network could help improve service to customers by continuously monitoring the electrical distribution system, as well as portions of customers' electrical equipment, and identify/predict power quality problems throughout the system. These improvements will serve the public interest by reducing electricity waste and improving customer service.

Ambient is continuing research to enhance its BPL system with additional applications such as current and voltage sensing, which will enable utilities to better monitor their distribution systems. This is accomplished without any additional equipment beyond the BPL equipment. This capability is important to utilities because it minimizes the amount of equipment that must be added to already congested utility poles. This development activity is also intended to be integrated with utility applications that will help develop a "Smart Grid" for the nation's electrical infrastructure. Implementation of a Smart Grid will allow more efficient usage of electrical energy and reduce consumer use, thus mitigating environmental concerns. Implementation of a Smart Grid would also help secure the electrical power grid. Ambient's goals in this aspect of its experimental research and development program are compelling

evidence of the extraordinary benefits which can be fostered by granting Ambient's application to be able to continue experimental operations.

3. The national scope of its Experimental License enables Ambient to develop, test, and demonstrate in different geographical areas as well as on different utility systems and topologies. As described in its Progress Reports, Ambient continues to have requests for testing systems from a number of power companies around the country. The nationwide scope of Ambient's Experimental License is needed to continue this important aspect of the development of Access BPL capabilities.

For example, Ambient has ongoing tests as follows:

The MV/LV test system with Orange and Rockland Utilities Inc. ("O&R") at Monsey, New York reported in the Company's previous Progress Reports is unchanged and remains in operation.

Ambient entered into a BPL Trial Agreement with San Diego Gas & Electric Company (SDG&E), a unit of Sempra Energy (NYSE: SRE), to evaluate BPL-enabled consumer and utility based applications.

Ambient has a BPL Trial Agreement with FirstEnergy Corporation to install Ambient Access BPL system (84 units) on 4 medium voltage circuits in Brimfield, Ohio.

Ambient entered into BPL Trial Agreement with Entergy Corporation. This Access BPL system includes up to 18 units on two separate medium voltage circuits in and near Little Rock, Arkansas.

Cooperation and collaboration by power companies is essential for future BPL commercial deployments. Power companies continue to want on-site demonstrations to gain familiarity with equipment compatibility, functionality on their systems, and the range of potential consumer and operational benefits which they can provide. From an engineering development viewpoint, there is significant useful information obtained from testing of the emissions compliance of its equipment designs on various power systems and settings, which may involve different types of distribution topologies, geographies and may be affected by different environmental or other factors.

4. As previously reported to the FCC, Ambient has conducted its Experimental test program so as to meet all its responsibilities under the FCC's rules and the terms of its Experimental License. Primary among these responsibilities is its duty to protect licensed users from harmful interference.

The individuals within the Company who are responsible for defining and implementing its test programs are highly qualified to anticipate, address and resolve interference issues:

Dr. Yehuda Cern, its Chief Engineer, who is also Vice Chair of IEEE Working Group P1675, is working on the draft "Standard for Broadband over Power Line Hardware and Personnel Safety" which has been completed and is now in preparation for balloting shortly.

Aron Viner, its Director of Compliance & Standardization, who is Chair of the PLC EMC Standard Working Group which is developing the Standard "Powerline Communication Equipment. Electromagnetic Compatibility (EMC) Requirements. Testing and Measurement Methods."

Ram Rao, the Company's Chief Technology Officer, and Aron Viner, who are also members of IEEE P1901, the BPL MAC/ PHY Standard Working Group, and are participating in the development of a "Standard for Broadband over Power Line Networks: Medium Access Control and Physical Layer Specifications."

As previously reported to the FCC, the Company has notched out its signals on Amateur bands, demonstrating significant advancements in its technology over the relatively short time period since the FCC adoption of its Access BPL requirements. These bands include the following Amateur Radio bands: 80, 40, 30, 20, 17, 15, 12 and 10 meters: 3.5-4 MHz, 7-7.3 MHz, 10.1-10.15 MHz, 14.0-14.35 MHz, 18,068 -18,168 MHz, 21-21.45 MHz; 24,890-24,990 MHz, and 28.0-29.7 MHz. Also, the Ambient frequency plan was modified to comply with excluded bands of operations according Table 1 of the FCC Part 15, Subpart G Rules.

The Company also has in place procedures to give prior notification to and to consult with public safety users in the areas where it plans to deploy its Experimental test systems. It has also sent written notifications to public safety users in areas where it has longstanding trials under its Experimental License. For example, notification letters were sent to all public safety users within a 10 kilometer radius of the Briarcliff Manor test facilities. Ambient has never received a single complaint from public safety users regarding interference. Ambient has sent similar notification letters in areas in which it has longstanding experimental operations.

5. Prior to the grant of Ambient's current Experimental License, ARRL had filed complaints alleging harmful interference to mobile amateur operations in the Briarcliff Manor area. As shown in the record of correspondence with the FCC, the Company was unable to confirm that its facilities were causing harmful interference as ARRL claimed. In fact the FCC concluded, based on its own testing, that its engineers " ... did not observe any BPL signal levels or effects from the Ambient Corporation Briarcliff manor BPL operations that appeared to have the potential to seriously degrade, obstruct or repeatedly interrupt mobile amateur communications at the specified addresses." See Letter of Bruce Franca dated February 10, 2005.

The Enforcement Bureau inquiry in May 2007 is the only other pending proceeding before the Commission on this issue, and Ambient has fully responded to the Enforcement Bureau's inquiry and taken steps to ensure that its equipment remains in compliance. See our

Progress Report submitted August 1, 2007 and the attachments thereto. As stated in that report, Ambient has voluntarily shut down all of its legacy equipment and is replacing it with second generation equipment. Ambient anticipates that the replacement of all legacy equipment with second generation equipment will be completed by August 21, 2007.

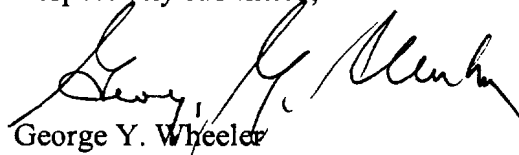
The upgraded network will have added interference avoidance features, such as deeper and cleaner notches — more than 35 dB below Part 15 limits. This deeper notching capability provides nearly twice the depth of the FCC required depth of 20 dB notches. In addition, the upgraded network in Briarcliff Manor will provide Ambient with experimental data from diverse geographical and distribution system topologies.

6. ARRL's Informal Objection includes a letter from a member of the Westchester County Board of Legislators, Mr. William E. Burton. The Burton letter, on its terms, indicates that Mr. Burton is not acquainted with the FCC's prior finding that Ambient's facilities comply with its rules and policies. Mr. Burton also alleges that Ambient has applied for renewal of its license "without making vitally important improvements in its technology." However, as clearly demonstrated herein, that is untrue. Furthermore, Mr. Burton appears unaware that legacy equipment has been voluntarily shut down and that replacement with second generation equipment is ongoing and will be finalized shortly. Nor have we received any complaint of any interference to any fixed amateur radio operation, nor are we aware of any instance in which an amateur RACES communication was interfered with.¹

Mr. Burton surely must appreciate and understand the value of BPL technology in support of important and viable public safety measures, such as monitoring the security and operation of the electricity grid. The goal of making that technology available to utilities is the underlying purpose of the experimental operations permitted by the Experimental License. It would be a disservice to public safety to inhibit or block the experimental testing necessary to develop, improve and implement this public safety technology.

For all of these reasons, Ambient urges OET to dismiss or deny ARRL's Informal Objection and grant the renewal application.

Respectfully submitted,



George Y. Wheeler

cc: James Burtles, Chief, OET Experimental Licensing Division
Kathryn S. Berthot, Esq., Chief, EB Spectrum Enforcement Division
Christopher D. Imlay, Esq., Counsel for ARRL

¹ In any event, amateur radio facilities are not deemed by the FCC to be public safety spectrum.

EXHIBIT A

Accomplishments during the course of the term of the Experimental License:

- 1) 3 Generations of electronic equipment
 - i) 10 major releases of software
- 2) 3 versions of overhead medium voltage inductive couplers
- 3) 2 versions of underground inductive couplers
- 4) 2 versions of low voltage capacitive couplers
- 5) 2 versions of low voltage inductive couplers
- 6) 6 major releases of network management software
- 7) development and demonstration of radiated emissions mitigation techniques
- 8) development of utility applications:
 - i) current sensing
 - ii) voltage sensing
 - iii) detection of interference from utility hardware
 - iv) power quality monitoring
 - v) support for other utility applications such as meter reading and device control
- 9) development of support for consumer applications
 - i) broadband Internet access
 - ii) Voice over Internet Protocol (VoIP)
- 10) Development of community services
 - i) Video security surveillance
 - ii) Environmental sensor monitoring